

In the Description of Drawings:

Please insert after the description for Figs. 55-C and 55-C':

Fig. 55-D is perspective view of a bike pack carrier utilizing multiple main frames of the present invention.

Fig. 55-D' is a perspective view of the pack carrier in Fig. 55-D completely loaded with three backpacks.

In the Conclusion, Ramifications, and Scope of Invention:

Please append the following paragraphs after paragraph 1047 (based on text of pre-grant publication US 2002/0043544A1 attached as Attachment B):

The main frame comprising of the basic three retaining means points may be integrated into an assembly that could be made up of simply one pair of elongated members or two or more pairs of telescoping tubes.

The three releasable retaining means may also be picked from the large selection of state of the art fasteners. Their adjusted locations may be retained without the use of snap buttons or friction knobs but by relying simply on the rigidity of the pack fastened to it.

In the Claims:

Cancel all claims of record and substitute new claims 101 – 142 as follows:

101. A main frame of a customizing pack carrier for ground, bike, and scooter use for any pack having attachment parts comprising:

- a) a frame face of size and shape adapted to have said pack secured thereon,

- b) wherein said frame face has a substantially centered upper point, a lower left point, and a lower right point,
 - c) a first releasable retaining means proximal to said upper point,
 - d) a second releasable retaining means proximal to said lower left point,
 - e) a third releasable retaining means proximal to said lower right point,
- whereby most commercially sold packs and bags already have a centrally located attachment means in the upper portion of a face of its body,
- whereby the ever popular backpack also already has the other two attachment parts on the lower portion of its body,
- whereby when said main frame is attached or integrated into a wheeled vehicle like a bike, a scooter or a wheeled base for ground use, the result is an alternative means for transporting load without sacrificing looks, convenience, adequate luggage capacity, and too much money.

101

102. The main frame in Claim *101* further including means to adjustably dispose said upper point and the lower left and right points apart from each other whereby the retaining means can be made to approximate the location of said attachment parts on said pack.

103

103. The main frame in claim *101* wherein said first, second and third retaining means are selected from a group comprising:

- a) rotary transmission means comprising a protrusion where a strap-like attachment part affixed on a pack can be wound around, wherein said protrusion is part of a user-controlled rotational segment whose rotation causes said strap-like attachment part to draw said pack closer towards said main frame as is necessary after which rotation is deterred,
- b) clamping means comprising:
 - a) at least one clamp of size capable of enclosing at least one strap of said pack, said strap having a topside and an underside,
 - b) adjusting means to increase or decrease clamping pressure on said strap,
- c) hook 122 or equivalent, whereby said hook retains effectively in conjunction with minimum additional provisions such as an obstruction, a lump, or a loop to a part of a backpack's original shoulder straps or affixed to a pack that does not have any,
- d) cleat 316 or equivalent around which a flexible strap can be wound, whereby said cleat provides means to neatly eliminate slack on said strap in addition to providing a reliable and secure attachment of said strap to said frame,

- e) other fastening ware including hooks, ring, snap hooks, buckles, press-release buckles, clips, latches, buttons, hook and loop fasteners, ratchets,
- f) stationary knobs, protrusions, slits, and cavities,
whereby the selection of retaining means includes not only those conveniently adaptable to directly mate with strap-like and looped attachment means affixed on a pack but also includes those commercially available mating fasteners with one mating member mounted on the frame and the other member affixed on the pack.

1A

104. The main frame in claim *103* wherein the rotation of said protrusion in selection (a) is deterred and allowed by means selected from a group comprising of:

- a) rotating a member of said segment clockwise or counterclockwise about an axis normal to the direction of its strap-drawing rotation, wherein said clockwise rotation of said member increases contact between a member of said rotational segment and a section of said frame so that rotation is deterred, wherein said counter-clockwise rotation of said member decreases or eliminates said contact so that said rotation can proceed,
- b) pushing down or pulling up a member of said segment wherein pushing down said member increases contact between a member of said rotational segment and a section of said frame so that said rotation is deterred, wherein said pulling up of said member decreases or eliminates said contact so that said rotation can proceed, and
- c) sliding a controlling switch towards an off or an on position, wherein said switch is connected to another member that can directly block movement of the user-controlled rotational segment,

whereby users can readily relate to the above means as the normal conventional ways of tightening or loosening connections between things.

1B

105. The main frame of claim *103* wherein said rotational segment in (c) contains a ratchet mechanism that defines direction of rotation of said segment, wherein said ratchet mechanism operates through alternating, bi-directional motions imparted by a user on an accessible handle grip, wherein movement of said grip can be allowed and deterred.

1C

106. The main frame in claim *103* wherein said clamp in selection (b) comprises:

- a) a top clamping block held by and slidably related in an up and down fashion to said face of said main frame wherein said top clamping block has an underside surface for bounding the topside of said strap,
- b) a bottom clamp mate having a topside facing opposite the underside of said top clamping block for bounding the underside of said strap, wherein said bottom clamp has a hinge connection on one end to said main frame and a releasable connection on the opposite end also to said main frame,

82 107. The main frame in claim 106 wherein said adjusting means in selection (b) is selected from a group comprising:

- a) an adjusting member of said face capable of exerting pressure when urged toward said top clamping block thereby causing the underside of said block to slide normally toward the facing stationary topside surface of said bottom clamping mate, wherein said pressure is decreased when said adjusting member is urged away from said top clamping block thereby causing the underside of said block to move normally away from the facing topside surface of said bottom clamping mate,
- b) the following provisions:
 - a) wherein said clamp have dimensions designed to set the space between the underside surface of said top clamping block and the topside surface of said bottom clamp mate initially at close to nothing,
 - b) compressive springs disposed normally between the topside of said clamping block and said face of said frame held in place by extensions on said face that retract into said topside of said clamping block when the springs are compressed, whereby the presence of straps directly exerts normal forces onto the adjacent underside of said top clamping block and consequently onto said compressive springs, whereby the resisting compressive forces exerted by said springs allow the topside and underside surfaces to maintain a snug grip on said strap.

83 108. The main frame in claim 103 wherein said clamp in selection (b) comprises:

- a) a member on said frame face having an underside for bounding the topside of said strap,
- b) a bottom clamp mate having a topside facing opposite said underside of said member for bounding the underside of said strap,
- c) wherein said clamp mate has a hinge connection on one end to a hinge housing and a releasable connection to a closure on the opposite end,

- d) wherein said hinge housing and said closure are both held by and slidably related in an up and down fashion to said frame face,
- e) a first compression spring dimensionally capable of receiving a top section of said hinge housing,
- f) a second compression spring dimensionally capable of receiving a top section of said closure,
- g) wherein the bottom ends of said first and second compression springs are supported by said frame face,
- h) wherein the top ends of said first compression spring and said second compression spring are bordered by a stopper member on said hinge housing and a stopper member on said closure respectively,
whereby the presence of straps exerts normal forces onto adjacent surfaces including the topside of said bottom clamp mate and consequently onto said first and second compressive springs by virtue of the stopper member bordering the top ends of the springs.

109. The main frame in claim 103 wherein said clamp in selection (b) comprise:

- a) a small flat type spring held on said frame face comprising one or more waves having an underside for bounding said topside of said strap,
- b) a bottom clamp mate having a topside facing opposite the underside of said flat-type spring for bounding the underside of said strap,
- c) hinge connection affixed to said frame face,
- d) closure connection affixed to said face a predetermined distance from said hinge housing,
- e) wherein one end of said bottom clamp mate is attached to said hinge means,
- f) wherein the other end of said bottom clamp mate is releasably connected to said closure means,
- g) wherein one end of said flat-type spring is slidably anchored within borders of said hinge connection and the other is slidably anchored within borders of said closure connection, whereby the presence of straps directly exerts normal forces onto the adjacent underside of said flat-type spring.

~~86~~ 110. The main frame in claim ~~101~~ wherein said frame face comprises a pair of elongated members spaced apart from each other by a base mounted to the bottom ends of said pair and by at least one transverse bar above said base wherein one of said transverse bars contains said upper point.

~~86~~ 111. The main frame in claim ~~110~~ wherein said elongated members are spaced parallel to each other and comprise a plurality of tubes each having predetermined longitudinal cross-sectional dimensions nested together and capable of being extended and retained in the extended position by some means.

~~86~~ 112. The main frame in claim ~~111~~ wherein said pair of nested tubes comprises a pair of two nested tubes, wherein the pair of larger tubes is joined to each other toward its upper end by one of said transverse bars containing said upper point, wherein the pair of smaller tubes is dimensionally receivable inside said pair of larger tubes and, wherein said pair of smaller tubes is joined to each other on top by another one of said transverse bars.

~~86~~ 113. The main frame in claim ~~111~~ wherein said pair of nested tubes comprises a pair of three nested tubes, wherein one end of the pair of largest tubes is mounted on said base, the pair of second largest tubes is adjustably receivable into said pair of largest tubes by some means, the pair of third largest tubes is receivable into said pair of second largest tubes, wherein said pair of third largest tubes is joined to each other on top by one of said transverse bars, wherein said pair of second largest tubes is joined to each other toward its upper end by another one of said transverse bars that contain said upper point, whereby the adjustable relationship between the largest and second largest pair of nesting tubes allows said main frame to be used for pack of different heights.

~~86~~ 114. The main frame in claim ~~111~~ further including means to allow at least one pair of tubes to have a quasi-permanent extendible length, whereby users of substantially differing heights are accommodated by the same main frame without the hassle of adjusting the main frame each time it is extended.

QD *SL* 8
115. The main frame in claim 111 wherein said plurality of tubes include at least two pairs of nesting tubes having a tapering cross-section whereby the tapered form obviates the use of top and bottom tube components for the retaining the tubes with each other.

Q1 *SL* 116. The main frame in claim 111 wherein said means of extending and retaining positions of a pair of nested tubes comprise:

- a) providing an inner tube nested within an outer tube,
- b) wherein said inner tube has an aperture near one end and wherein said outer tube has a series of apertures along its length,
- c) providing a snap button disposed inside said inner tube of said pair of nesting tubes, wherein said snap button has a positioning member, wherein said positioning member is engaged in said aperture on said inner tube and further capable of engaging into another aperture on said outer tube of said pair of nesting tubes,
- d) providing a catching extension of predetermined shape and dimension behind said positioning member, so that said extension can latch on to another bumper structure of shape and dimension determined in conjunction with those of said catching extension,
- e) providing reinforced anchoring means for said snap button to eliminate the possibility of displacement when said positioning member is depressed for an extended time,
- f) providing a third elongated member dimensionally receivable inside said inner tube, said elongated member having a bottom terminal containing said bumper structure,
- g) delivering said third elongated member into said inner tube to reach a maintained position where its said bumper structure is capable of holding onto said catch extension when said extension is introduced,
- h) introducing said catch extension by pressing said positioning member of said snap button inward until the extension latches onto said bumper structure,
- i) moving the inner and outer tubes relative to each other until the desired position is reached,
- j) withdrawing said third elongated member from said inner tube to release said bumper structure from said catch extension,
- k) finely adjusting the positions of the inner and outer tubes relative to each other until said positioning member becomes engaged into the nearest aperture on said outer tube, whereby when said means is applied to an extendible unit with a plurality of tubular columns each of which having at least two tubular nesting tubes that can only be

extended if done simultaneously as by lifting a transverse bar connecting their top terminals like that required of a telescoping pack carrier, easily enables only one person with at least one hand to perform height adjustments.

a2

a1

117. The main frame in claim ~~116~~ wherein the combination of said catch extension and said bumper structure is selected from a group comprising of:

- catch 54-2 and bumper 64-2 or their equivalents,
- catch 290 and bumper 289 or their equivalents, and
- catch 292 and bumper 292 or their equivalents.

a3

101

118. The main frame in claim ~~101~~ wherein said main frame comprises a single column having:

- at least one arm of length about the width of a pack, said arm centrally and rotatably arranged cross-wise on the lower end of said column,
 - wherein the right and left terminals of said arm are the said lower right point and the said lower left point respectively,
 - wherein the upper end of said column contain said upper point, and
 - means to anchor said arm parallel-wise onto said column when not in use,
- whereby a single column frame further equipped with wheel means makes for a more compact carrier and can also be adapted for use on a scooter.

a4

a3

119. The main frame in claim ~~118~~ wherein said length is apportioned between two shorter arms, one end of each of said shorter arms emanate laterally from opposite sides of the lower end of said column, the other end rotatably anchored onto the lower end of said column, wherein said short arms are each rotatably urged up towards said column and retained in place by some means when not in use.

a5

101

120. The main frame in claim ~~101~~ further including behind said frame face a plurality of extensions for adapting and mounting to a wheeled support.

a6

101

121. The main frame in claim ~~101~~ further including a supporting base comprising:

- a base frame of size adapted to supporting the bottom of said pack, said base frame having an underside,

- b) wherein said base frame is connected to the lower end of said main frame by some first means, and
- c) a plurality of extensions from said underside of said base frame for adapting and mounting to a wheeled support.

q1

- ~~121~~ 122. The main frame and supporting base combination in claim ~~121~~ wherein said main frame is mounted rotatably by some second means between a position normal to said supporting base and a position folded onto said supporting base, further including means to retain said main frame in said normal and folded positions, whereby when said wheeled support is a bike, the resulting bike pack carrier can carry said pack upright or lying down, and whereby when said wheeled support are casters, said folding option allows for compact storage of said combination.

as

- ~~101~~ 123. The main frame in claim ~~101~~ further including a supporting base comprising:
 - a) a base frame of size adapted to supporting the bottom of said pack,
 - b) wherein said base frame comprises front and back sections slidably related by some first means,
 - c) wherein said back section is connected to the lower end of said main frame by some second means,

whereby the base can conform to the depth of the loaded pack and therefore stabilize it.

qd

124

- ~~102~~ 124. The main frame in claim ~~102~~ wherein said means to adjustably dispose said upper point apart from the lower points is selected from a group comprising:
 - a) providing a structure comprising:
 - a) a first face member and a second face member,
 - b) wherein said first face member and said second member are adjacent each other and are slidably related,
 - c) wherein at least one of the first, second and third retaining means is disposed on at least one of the first and second face members,
 - d) wherein said first face member has a main aperture,
 - e) a snap button internally mounted to said first face member,
 - f) wherein said snap button has a position head exposed outwardly through said main aperture,

- g) wherein said second face member has a plurality of secondary apertures along its length,
- h) wherein said secondary apertures are vertically aligned adjacent said positioning head, whereby the adjustment is accomplished by urging inwardly said positioning head out of any said secondary aperture and sliding the first and second face members relative to each other until the desired secondary aperture is aligned with said positioning head,
- b) providing a structure comprising:
- a) a first face member and a second face member adjacent each other and slidably related,
 - b) wherein at least one of the first, second and third retaining means is disposed on at least one of the first and second face members,
 - c) wherein said second face member has a hole,
 - d) a spring button or equivalent anchoring mounted externally to said second face member,
 - e) wherein said spring button has a positioning head capable of engaging inwardly through said main aperture and of being manipulated from behind,
 - f) wherein said first face member has a plurality of secondary holes aligned vertically along its length and disposed adjacent said positioning head, whereby the adjustment is accomplished by urging outwardly said positioning head out of any said secondary aperture and sliding first and second face members relative to each other,
- c) providing a structure comprising:
- a) a first face member and a second face member adjacent each other and slidably related,
 - b) wherein at least one of the first, second and third retaining means is disposed on at least one of the first and second face members,
 - c) a lopsided friction knob mounted on said second face member,
 - d) wherein said second face member has a window,
 - e) wherein said friction knob has a head,

- f) wherein said head is communicable to said first face member through said window, whereby the friction between the friction knob head and outer walls of said first member maintains the position of two slidable members relative to each other,
- d) providing a structure comprising:
 - a) a first face member and a second face member, both slidably related,
 - b) wherein at least one of said first, second and third retaining means is disposed on at least one of said first face member and said second face member, whereby the connections between the retaining means and the attachment parts of said pack and the rigidity of said pack maintains the relative positions between the two slidable members,
- e) further including additional retaining means at different levels of said lower left point and said lower right point upwardly approaching said upper point, whereby the addition of more attachment points even if only three are used at a time obviates the need for adjusting the location of said first retaining means relative to the first and second retaining means,
- f) further including additional retaining means at different levels of said upper point downwardly approaching the lower left and right points,
- g) providing a structure comprising:
 - a) a main first tubular member with threaded outside walls,
 - b) an adjusting ring with threaded inner walls,
 - c) wherein said threaded outside walls mate with said threaded inner walls,
 - d) a supporting connector having a tubular terminal received outside said first tubular member,
 - e) wherein a said first retaining means is disposed on said supporting connector,
 - f) wherein said tubular terminal contain a side window into an inner cavity,
 - g) wherein said adjusting ring is disposed inside said inner cavity, whereby the location of the tubular terminal and consequently the retaining means is defined by the position of said adjusting ring, said position being attained by threading through said side window said ring up or down said first tubular member,

- h) providing a structure comprising:
- a) a main first tubular member with threaded outside walls,
 - b) a pair of adjusting rings with threaded inner walls,
 - c) wherein said threaded outside walls mate with said threaded inner walls,
 - d) a supporting connector having a tubular terminal received outside said first tubular member,
 - e) wherein a said first retaining means is disposed on said supporting connector,
 - f) wherein said adjusting rings each border the top and bottom of said tubular terminal, whereby the positions of the pair of adjusting rings consequently define the location of the retaining means.

~~100~~
125. A method of customizing a pack carrier for ground , bike and scooter use comprising:

- a) providing a main frame of size and shape adapted to have a pack secured thereon, said main frame having a face with a substantially centered upper point, a lower left point and a lower right point,
- b) providing a first releasable retainer proximal to said upper point,
- c) providing a second releasable retainer proximal to said lower left point,
- d) providing a third releasable retainer proximal to said lower right point,
- e) incorporating said main frame into a component of a ground carrier, a bike and a scooter,
- f) providing said pack with a centrally disposed uppermost first attachment part where there are not any,
- g) providing said pack with a second attachment part proximal to its bottom right corner if there is not one already,
- h) providing said pack with a third attachment part proximal to its bottom left corner if there is not one already,
- i) placing said pack against said face,
- j) attaching said first attachment part to said first releasable retainer until taut,
- k) attaching said second attachment part to said second releasable retainer until taut,
- l) attaching said third attachment part to said third releasable retainer until taut.

101

126. A main frame and a supporting base combination for a customizing pack carrier for any pack having attachment parts comprising:

- a) a frame face of size and shape adapted to have said pack secured thereon,
- b) a base frame comprising:
 - a) a back section and a front section,
 - b) wherein said back section has a back edge and said front section has a front edge
 - c) wherein said back section and said front section are slidably related by some first means,
 - d) wherein said main frame is connected at a substantially normal angle proximal to said back edge of said back section by some second means,
 - e) wherein said front section has a topside extension proximal to said front edge of said front section,

whereby sliding said back section and said front section apart from or closer to each other as needed stabilizes the loaded carrier.

102

101

127. The main frame and supporting base combination of claim 126 wherein said first means to slidably relate said back section and said front section comprise:

- a) provision for a back right cavity and a back left cavity for said back section,
- b) provision for a front right cavity and front left cavity for said front section,
- c) wherein said back right cavity connects to said front right cavity and runs continuously from a back right terminal to a front right terminal substantially on the right side of said base frame,
- d) wherein said back left cavity connects to said front left cavity and runs continuously from a back left terminal to a front left terminal substantially on the left side of said base frame,
- e) wherein all the back and front terminals are equipped with anchoring rods or equivalent anchoring means,
- f) an elongated right elastic member and an elongated left elastic member,
- g) wherein one end of said right elastic member is anchored to the anchoring means on said back right terminal,
- h) wherein the other end of said right elastic member is anchored to the anchoring means on said front right terminal,

- i) wherein one end of said left elastic member is anchored to the anchoring means on said back left terminal, and
- j) wherein the other end of said left elastic member is anchored to the anchoring means on said front left terminal,

whereby pressure from the load directed normally toward said topside extension automatically draws out said front section thereby stabilizing the load at all times.

~~103~~ 128. The main frame and base frame combination in claim ~~126~~ wherein said back section of said base frame is permanently mounted to the bottom of a pack.

~~104~~ 129. The main frame and base frame combination in claim ~~126~~ for ground use

- a) wherein said back section and said front section each has an underside surface,
- b) wherein said underside surface of said back section has a plurality of rear support members,
- c) wherein said underside surface of said front section has at least one forward support member
- d) wherein said rear support members are equipped with swiveling casters,
- e) wherein said forward support member is equipped with at least one wheel form selected from a group comprising of ball bearing glides and swiveling casters.

whereby said pack carrier having said swiveling casters and said glides on both the rear and forward supports are more easily maneuverable in any direction along narrow aisles and other tight spots in school buses, school lockers, and closets than carriers having rear-only non-swiveling wheels.

~~105~~ 130. The main frame and base combination in claim ~~126~~ wherein said means to slidably relate said back section and said front section comprise:

- a) providing one of the sections with at least one substantially front-ward directed series of wavy indentations, each indentation having a crest and a trough,
- b) providing the other section with at least one flexing button comprising:
 - a) a button head with a smoothly curved side and straight side opposite each other,
 - b) an elongated section or neck extending substantially in the same general direction as said series of wavy indentations and capable of being lodged into any of the troughs,

- c) providing the said other section in (b) a separate rigid control member with one side disposed adjacent the straight side of said button head having a control contact protrusion terminating in a straight surface slidably related against said straight side of said button head, and
- d) wherein said rigid control member is externally controlled by some means to freely and fixedly lodge and dislodge said button from said trough of one of the indentations,

whereby said back section and said front section are free to slide past each other when said button head is freely able to dislodge from any indentation thereby allowing said base frame to be adjusted as needed to the depth of the load.

101. The main frame and base combination in claim 130

- a) wherein said neck of said button further includes a smoothly curved on/off protrusion on the same side as the said straight side of said button head, and
 - b) wherein said rigid control member also further includes an on/ off extension on one side adjacent said on/off protrusion on said neck,
- whereby said on/off protrusion and on/off extension slidably fixes and frees said button head lodged in said trough of said indentation by virtue of the control contact protrusion slidably blocking and unblocking the straight side of said button head.

102. The main frame and base combination in claim 130

- a) wherein the operation of said control contact protrusion on said rigid control member includes the use of a compressible spring disposed inside a cavity in the section that houses said rigid control member,
- b) wherein said spring is compressible by the user-controlled rigid member as said control contact protrusion of said rigid member is moved to unblock said straight side of said button head thereby rendering said front and back sections of said frame free to be extended apart,
- c) wherein said control contact protrusion of said rigid member will automatically move back to block straight side of said button head when said compression is released.

- 104*
- 105*
133. The main frame and base combination in claim 126 wherein said means to slidably relate said back section and said front section comprise:
- providing one of the sections with at least one substantially front-ward directed series of wavy indentations, each indentation having a crest and a trough,
 - providing the other of the sections with the following:
 - at least one flexing button having a smoothly curved button head fixedly connected by an elongated member to a user-controlled box,
 - a smoothly curved channel lodging said flexing button and said elongated member,
 - an elastic member or spring disposed inside a cavity wherein said elastic member is compressible by said user-controlled box,
 - wherein said back and front sections are arranged such that said button head is capable of lodging into any of the troughs , whereby said flexing button and said elongated member is retracted along said smoothly curved channel as said user-controlled box is pulled toward said elastic member rendering both sections free to slide past each other.

- 109*
134. A main frame for a customizing pack carrier for any pack comprising:
- a frame structure of size and shape adapted to have said pack secured thereon,
 - a comfortable padded support of resilient material spanning a section of said frame structure adjacent said pack selected from a group comprising of:
 - an already looped cushioning envelope containing said resilient material for slipping over said frame structure down to the lower section thereof,
 - a wrap containing said resilient material for directly enveloping the lower section of said frame structure by fastening its free edges directly onto said frame structure using laces, buckles, buttons, hook and loop fasteners, zippers or other equivalent state of the art hardware,
 - a layer of said resilient material for attaching directly onto strategic locations on said frame structure using laces, clasps, clamps, buttons, hook and loop fasteners, zippers, and the like,
 - separate cushioning wraps for individually enveloping upright elongated members making up said frame structure,
 - a semi-rigid or similar resilient plastic integral to said frame structure,

whereby an added layer of cushion between the rigid frame of pack carriers and the back of the user provides more comfort and less fatigue and strain, and whereby when more desirable features are added to said padded support, said carrier is easily converted into an ergonomic carrier.

110

135. The main frame of a customizing pack carrier in claim 134 wherein said padded support comprises a layer of resilient material like foam, rubber, cotton, encased air, fiberfill, or the like having two faces bordered by two long and narrow sides and narrow top and bottom sides in a casing of fabric, plastic, vinyl, rubber, or similar flexible material.

112

136. The main frame of a customizing pack carrier in claim 134 wherein said padded support comprises a layer of resilient material like foam, rubber, encased air, cotton, fiberfill, or other similar material having a convex component whose lateral cross-section is of shape approximating the thoracic and upper lumbar regions of the spinal curvature as defined by correct posture of the user's body, whereby the presence of said convex component at the right place and the weight of the load against the user's shoulders direct a component of said weight toward the lumbar region urging the user to straighten up and allowing his or her back to approach his or her naturally correct spinal curvature, thus, encouraging and promoting good posture and less fatigue while carrying said pack carrier.

113

137. A main frame and base frame combination for a customizing pack carrier for any pack comprising:
- a main frame of size and shape adapted to have said pack secured thereon,
 - a base frame of size capable of supporting a pack,
 - wherein said base frame has an underside having a plurality of support members,
 - a first means for joining said main frame at a substantially normal angle to said base frame,
 - a second means for inclining said main frame forward,
 - provisions for a seat comprising:
 - a first sheet of material of sufficient size for use as said seat and to be retained by some third means behind a load on said carrier when not in use, and
 - a fourth means for attaching said seat onto said carrier,

whereby said provisions for a seat and said second means to incline said main frame allow a user to transform said customizing pack carrier into a backrest with seat even without unloading the pack from the carrier.

138. The main frame and base frame combination in claim 137 wherein

- a) said fourth means for attaching said seat onto said carrier comprise a tie, ring, or similar looped material disposed at the distal corners of said seat to a lower section of said main frame, wherein said tie, ring, or similar looped material can freely move up and down a certain predetermined distance along said main frame,
- b) said main frame further includes a cushioning envelope with an open bottom surrounding part of said main frame adjacent to said pack, and
- c) said third means for retaining said seat when not in use comprises urging up said seat through said open bottom of said cushioning envelope, said tie, ring, or similar looped material freely moving up said main frame and said seat until said seat is totally contained inside said cushioning envelope,

whereby the user can easily replace said seat when it is worn out and can easily conceal said seat when not in use, and whereby the clothes of the user are not exposed to the dirty underside of said seat when the carrier is used subsequently in the backpack mode.

139. The customizing pack carrier in claim 137 further including:

- a) a second sheet of about the same size appended to the front edge of said first sheet of material to produce a double-layered seat, and
- b) a fifth means for attaching and sixth means for retaining said double-layered seat onto said carrier,

whereby the appended said second sheet provides a protective ground cover for the underside of said first sheet so that dirt do not get onto the clothes of the user thereafter when the carrier is used in the backpack mode.

140. The customizing pack carrier in claim 139

- a) further including a cushioning envelope surrounding part of said main frame adjacent to said pack,
- b) wherein said fifth means for attaching said double-layered seat is selected from a group comprising of:

- a) buttons, hook and loop fasteners, or other equivalent state of the art hardware for fastening the rear end of said double-layered seat directly onto the bottom edge of said cushioning envelope,
- b) ties, hook and loop fasteners or other equivalent state of the art hardware for fastening the rear corners of said double-layered seat to the lower section of said main frame,
- c) wherein said sixth means for retaining said double-layered seat is selected from a group comprising of:
 - a) buttons, ties, hooks, hook and loop fasteners, or other equivalent state of the art hardware for attaching said double-layered seat directly onto the exposed side of said cushioning envelope of said main frame, and
 - b) buttons, ties, hooks, hook and loop fasteners, or other equivalent state of the art hardware for attaching said double-layered seat directly to said main frame just above cushioned section.

- ~~141.~~ The customizing pack carrier in claim ~~137~~ wherein said second means for inclining said main frame is selected from a group comprising of:
- a) collapsible front support members,
 - b) a fixable hinged connection between said base frame and said main frame, and
 - c) base support members of predetermined shape to allow rocking or rotational motion in conjunction with reinforced connection between said main frame and said base frame.
- ~~142.~~ The customizing pack carrier in claim ~~141~~ wherein said fixable hinged connection between said base frame and said main frame comprise:
- a) the following on one part of said fixable hinged connection:
 - a) a circular hub having a normal centrally disposed cylindrical pin frame and a side window, said pin frame defining the axis of rotation of said hinged connection,
 - b) a spring biased plug 189L or 189L' or equivalent retained normally and rotatably on said pin frame in said hub by a compression spring, said plug having a locking member on one side and a button on one end, said button dimensionally receivable into said side window of said hub,
 - b) the following on the other part of said fixable hinged connection:

- a) a circular central recess having a central aperture for receiving an axis pin, said recess of size capable of receiving the rotating span of said locking member of said plug when said button of said plug is depressed,
 - b) notches or recess extensions on the perimeter of said central recess, each capable of mating with said locking member when said button is not in its depressed position, wherein each notch corresponds to a specific relative position between said base frame and said main frame, and
 - c) a hinge pin going through said pin frame and through said central aperture on said central recess, said pin being capped in place at both ends,
- whereby given the above provision, operating said fixable hinge connection comprise depressing and maintaining depressed position of said button of said plug disposed outside said side window of said hub and urging one part of said hinge connection to rotate past the other part until the desired relative position of both parts is reached after which pressure on said button is released and said locking tooth locks into position inside one of said recess extension, whereby the operation is easy, quick, flexible and lockable in the inclined and fully folded positions.